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Technical Annex

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CONTENTS

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2 LIST OF STAKEHOLDERS CONSULTED

2.1 Interviews conducted during the Inception Phase

Organisation		Name	Role/ Team
European Commission, DG ECFIN	1.	Mr Andreas PAPADOPOULOS	Deputy head of unit / D.2 Neighbourhood countries – Macrofinancial assistance
	2.	Ms Alexandra JANOVSKAIA	Policy Analyst - Desk Economist for Belarus, Georgia and Ukraine / D.2 Neighbourhood countries – Macrofinancial assistance
European Commission, DEVCO	3.	Ms Sirpa TULLA	Presently, Geographical Coordination/ Neighbourhood South (Unit F2). Previously, handling Georgia file at DG ECFIN (2002 – 2009)
	4.	Mr Massimiliano MESSI	Presently, Geographical Coordination/ Neighbourhood East (Unit F1)
European External Action Service (then DG RELEX)	5.	Ms Deren DERYA	Presently, EEAS Central Asia Division Previously, International Relations Officer - Desk Officer Georgia
	6.	Mr Per-Enar ENARSSON	Presently, International Relations Officer - Desk Officer Georgia
The Delegation of the European Union to Georgia	7.	Mr Martin KLAUCKE	Head of Section - Operations (Georgia)

2.2 Interviews conducted during the Data Collection Phase

Organisation	Name	Role
The Delegation of the European Union to Georgia	1. Mr Stephen Stork	Deputy Head of the Operations
	2. Mr Irakli Khmaladze	Project Manager, Economics and Public Finance (PFM Reforms)
Project Administrative Office (PAO) in charge of coordination of the Twinning, TAIEX and SIGMA projects	3. Mr Roman Kakulia	PAO Director, Advisor to the State Minister
	4. Mr Davit Kalatozishvili	PAO, Twinning Project Officer
National Bank of Georgia	5. Mr Archil Mestvirishvili	Vice-President
Ministry of Finance, Government of Georgia	6. Mr. Konstantine Kintsurashvili	Deputy Minister
	7. Ms. Marekh Khmaladze	Deputy Head of External Relations department
	8. Mr. Giorgi Kakauridze	Head of Budget Department
	9. Ms Ekaterire Gurtsadze	Member of Budget Department
	10. Ms. Natia Mikeladze	Head of Internal Audit Department
	11. Ms. Nino Eliashvili	Head of Secretariat of Internal Audit Council
	12. Ms. Giuli Chkuaseli	Members of Secretariat of Internal Audit Council
	13. Mr. Levan Valishvili	
State Procurement Agency - Georgia	14. Mr. Tato Urjumelashvili	Head of State Procurement Agency
	15. Mr. David Marghania	IT expert
Chamber of Control of Georgia	16. Mr Devi Vepkvadze	Deputy Chairman
	17. Mr Giorgi Alasania	Head of Audit Department
IMF	18. Mr. Edward Gardner	IMF Senior Resident Representative in Georgia
	19. Ms Mariana Colacelli	IMF Economist
World Bank	20. Mr Pedro L Rodriguez	Lead Economist
PMCG	21. Mr Alesksi Aleksishvili	Chairman. Previously Minister of Finance of Georgia. In office. June 2005 – September 2007

3 REPORT OF THE FOCUS GROUP DISCUSSION WITH PFM EXPERTS

3.1 Introduction

Within the framework of the *ex-post evaluation of the EU's Macro Financial Assistance (MFA) to Georgia*, the study team organised two focus group discussions in Tbilisi to gauge wider perceptions of Georgia's reform efforts and the role of the EU in promoting better economic governance in the country:

- The first focus group discussion was held on 15 December 2011 with PFM experts;
- The second focus group discussion was held on 16 December 2011 with a wider group of stakeholders comprising representatives of businesses, think tanks and civil society organisations.

This report summarises the results of the first focus group discussion.

3.2 Objectives of the Focus Group Discussion

The objective of the focus group discussion was to reflect and deliberate over the following topics:

- *Georgia's progress with PFM reforms in recent years* - what has been the trajectory of PFM reforms in the past few years? Has the progress been satisfactory? Are there areas requiring further attention?
- *The relevance of EU-MFA conditionality* – was the focus of MFA reforms relevant and appropriate? Or could the EU have promoted short term reforms in any other area?
- *The political/ operational reinforcing effect of EU/ MFA support* - whether EU/ MFA support has played any role in (a) strengthening political commitment to PFM reforms? (b) Accelerating reforms? (c) Promoting reforms which would otherwise not have been undertaken?
- *Impact of PFM reforms* – what benefits have materialised as a result of the PFM reforms undertaken by Georgia (and particularly those supported by the MFA)?

3.3 Georgia's progress with PFM reforms

The general opinion of the experts around the table was that Georgia has made impressive progress in the area of PFM reforms. PFM reforms have been on the agenda since the new Government came to power (in 2004). The Public Expenditure and Financial Accountability (PEFA) assessment[1] highlighted areas of weakness in Georgia's PFM system and ever since, the Government has been taking steps to address these weaknesses. For example, the creation of a Treasury Single Account (TSA) was a major achievement – it has reduced burden on the spending units. PFM reforms however, are an ongoing process and there are still some issues requiring attention.

As regards PFM reforms in specific areas, the following comments were made by the participants:

Programme based budgeting

- Programme based budgeting (PBB) is a relatively new concept in Georgia. Things are moving in the right direction but, this is not an area where quick wins can be achieved as implementation of PBB involves significant organisational changes. It took five to ten

[1] The PEFA was published in November 2008 although the analysis and assessment was undertaken in the main mission held during May-June 2007 (providing mid-2007 as the baseline)

years for the developed countries to fully implement PBB. In Georgia, PBB has only recently been initiated (in 2009). The focus is on reinforcing the link between the budget and the strategic document namely, Basic Data and Directions (BDD).

- Work on BDD started in 2005. The adoption of the new budget code has strengthened the link between the BDD and the final budget. Prior to the introduction of the new budget code, there was little link between the BDD and the final budget.
- Georgia has made very rapid progress in the area of PBB, especially when compared to other countries in the region. For example, Armenia has been working on PBB since 2004.

Internal audit

Recent developments include:

- The new Minister of Finance Mr Dimitri Gvindadze (appointed in June 2011) has placed internal audit reform high on the agenda.
- In March 2010, the Law on State Internal Audit and Inspection was adopted by the Parliament of Georgia. Amendments to the law are currently being drafted with a view to make it compliant with Public Internal Financial Control (PIFC), i.e. by clearly drawing out the distinction between internal audit (which is a pro-active approach to control based on risk assessment) and inspection (which is a reactive approach based on disciplinary and punitive measures).
- 12 out of 16 ministries have established Internal Audit Units (IAU); 4 other ministries have a waiver until 2013: Defence, Interior, Justice, Corrections and Legal Assistance. The participants felt that the ministries without IAU are mainly law enforcement ministries where inspection units are particularly strong.

Chamber of Control of Georgia (CCG)

- The Law on the Chamber of Control of Georgia was enacted in 2009.
- Revisions to the law have been tabled in November 2011 (expected to be adopted by the Parliament in January 2010). The proposed amendments will increase the independence of the CCG– at least on paper.
- On the ground, there is a sort of self-censorship. The Government does not interfere with the activities of the CCG or tells it what to do; but, *'there are lines the CCG will not cross'*.
- The office of the CCG is being relocated outside Tbilisi. The official rationale behind this is to de-concentrate state services in an attempt to develop other regional cities and rebalance the regions (a quarter of the Georgian population and economic activity is concentrated in Tbilisi). Other institutions, e.g. the constitutional court have already been relocated (to Batumi). This however raises concerns as to the ability of the CCG to undertake frequent on-site visits from a distant location. The CCG will be located further away from the bodies that they audit. The relocation might also aggravate the capacity issue which the CCG is already facing –as some staff will not be willing to leave the capital city. Moreover, the move will have high initial cost implications. It is questionable whether over the long term the strategy will really pay off in terms of creating another attractive centre.
- There are significant human resources constraints in the auditing sector. There are very few certified auditors – only a fraction of operating auditors (~1/10) is certified. CCG tends to recruit highly educated young staff who sometimes lack experience. There is also a very high staff turnover and issues with staff retention. To illustrate this: Out of the 300 CCG staff receiving ACCA training – only 30 remained with the organisation in summer 2011. [NB: not all 300 staff initially enrolled had successfully completed the training. In Georgia training is somewhat approached as an examination, a test with those not passing it at risk of being fired]. The remaining have left to join the private sector.

- The CCG does not do enough to have at least 20 qualified auditors (1/5th of its strength). It still requires 80 auditors. The CCG even says it needs 160 auditors, but that might be a luxury that Georgia cannot afford. Initially, even 20 well-qualified auditors can make a difference. Moreover, the CCG lacks auditors who can carry out non-financial audits (e.g. performance audits).
- The CCG is a rather small organisation but receives a lot of external support. External control is an area of weakness and donors naturally want to get involved in this area.

The relevance and reinforcing effect of EU-MFA conditionality

- MFA is a quick disbursing instrument and as such, it cannot promote reforms that go beyond the surface. Within the area of PFM reforms, the focus of MFA conditionality was challenging, but appropriate.
- Having a robust PFM framework is important – it ensures that public resources are efficiently and effectively used.
- Promoting PFM reforms is also relevant in the context of budget support. Attaching conditionalities to budget support is reasonable - they act as push factors for reforms. It must however be accompanied by technical assistance – in a coordinated manner with other donors.
- Broadly speaking, PFM is an area where there is commitment to reforms on the Georgian side. The first PFM vision dates back to 2005. It was a solid document recognising that reforms were needed. The 2005 vision also triggered donor interest in this area.
- A number of donors have championed PFM reforms in Georgia. The European Commission has played a visible and defining role in promoting reforms in the area of internal audit.
- Ownership matters a lot when it comes to the reforms/activities. For example, donors meeting at the CCG, initiated at their own initiative, are productive. In comparison, the PFM coordination council meetings do not add much value – with real decisions being made outside this forum.
- MFA conditions included two conditions related to the adoption of laws (namely: (i) the Parliament of Georgia adopts the Law on Internal Audit and Inspection; and, (ii) the Parliament of Georgia adopts the Budget Code with provisions on programme-based budgeting). WB/IMF avoid formulating this type of conditions. Georgia is a sovereign country: donors interact with the Government and not the Parliament who is in the end in charge of passing the laws. The adoption of law is up to the Parliament and is not a process that can be controlled.
- WB/ IMF tend to adopt a 'softer' approach in formulating such conditionality e.g. the Government prepares a draft law and presents it to Parliament. The tendency among international donors is to move away from strict conditions and turn towards softer benchmarks acting as early alert systems.
- Good practice – as in the case of CCG - is to prepare the draft law with assistance of experts while instituting an early dialogue with the budgetary and financial committee of the Parliament who is in charge of adopting the law.
- The use of conditionality relating to adoption of laws can have a perverse effect. It puts pressure on the recipient Government to rush through the process in order to satisfy the donors and meet the conditionality relating to disbursement of funds. As a result, laws are often passed which are not fit for purpose.
- In Georgia, amendments to laws are frequent. It was mentioned that Georgian authorities have a tendency to rush with reforms. It is sometimes the case that a law is adopted and once implementation starts, needs for amendments are felt (e.g. with the Budget Code), as the initial proposals do not always take into account implementation constraints.

- Amendments are not always adopted to make progresses in the right direction (for example in the case of the Law on Local Governance). But in the fields concerned here, i.e. in the case of internal audit and the CCG, the new amendments are expected to be positive developments.

3.4 The Impact of Recent PFM Reforms in Georgia

Programme based budgeting (PBB)

- Progresses have been made in terms of presenting government priorities, especially at the state level. The local level PBB and subsequently consolidation processes are not yet functional enough. The local budget represents roughly 4 per cent of the GDP. The local level authorities do not have comprehensive information to calculate the transfer amount.
- There is big room for improvement as far as expenditure management is concerned. For instance, there is great variation in the expenditure of local municipalities (NB: MoF transfers funds directly to the local municipalities).
- Local units are required to produce BDDs, but the quality is not always good. Tbilisi has recently started to prepare a BDD. Most lack capacity and expertise to prepare BDD. It is hard for local officials to digest the material for BDD. This is a work in progress.
- PBB was first introduced in 2010 in three pilot ministries and rolled out to three more ministries in 2011 (education, health, environment, agriculture, justice, corrections and legal assistance). Programme budgeting will be fully implemented in January 2012 across all 16 Ministries, with Performance Indicators presented in a separate Annex. It is too early to claim any changes in expenditure composition as a result of PBB.
- Transparency has however already increased – the 2012 budget is very transparent. It gives more freedom to spending units (which at the same time puts more pressure on the CCG to carry out checks). There are more explanatory notes on what the government is financing and the open budget index is improving[2]. Prior positive changes include the introduction of a medium term expenditure framework (MTEF), back in 2005, which was a pre-requisite for PBB.
- An acid test of reforms in this area is whether government revenues have increased over time without undermining economic growth. A good indicator that budget processes have improved over time is the level of revenue collection which has dramatically increased over time in real terms.

Internal audit

- It is still too early to see any tangible benefits. The Internal Audit Units have only recently been constituted. Consolidated statistics are not available on how many audits have been conducted and what proportion of public expenditure has been covered by these audits.
- Methodological documents on how to perform audits are still in development - In 2010 a pilot audit was carried out at the Ministry of Finance with the cooperation of an EU expert - pilot audits will be conducted in six ministries in 2012.

External audit

- The reputation of CCG has enhanced and it has more credibility.
- It still suffers from a lack of resources. CCG spends a lot of time producing reports required by the law, but has little time and resources to spare to conduct audits of ministries. Reporting requirements are burdensome / time consuming and the CCG is not in a position to substantially go beyond the examination of financial accounts and enter into compliance and performance auditing. Feedback from the Parliament on the reports

[2] http://internationalbudget.org/wp-content/uploads/2011/04/OBI2010-Georgia.pdf . New survey will be launched in 2012

they receive from the CCG is positive but they regret their insufficient number [for the number of audits they carry out, see CCG annual reports].

- The CCG suffers from a high turnover. Staff are attracted by the higher salaries in the private sector. The CCG should put in place a retention strategy (long-term contracts[3], holidays, improved work environment). Training/certification should be associated with commitment to stay for a minimum period of time within the institution.
- The CCG also suffers from the general skills mismatch observed in the country. There are no proper school of accountancy in Georgia (one was funded by USAID but the translation of ACCA books into Georgian has been a disaster).
- In addition, the public is insufficiently aware of the activities of the CCG – a comprehensive communication strategy is lacking.

3.5 Closing Remarks

- A number of donors are active in Georgia. It is important for somebody to coordinate these reforms.
- What is needed is more technical know-how and assistance. For example, ACCA training is a potential area for the donors to get involved in.

[3] Some people in CCG do not even have regular employment contracts

3.6 List of Participants

Organisation	Name	Position	email
USAID contractor	1. Ms Marika Gorgadze	USAID Good Governance in Georgia project, former staff of the US Treasuryd	mgorgadze@msi-georgia.com
GIZ	2. Ms Anja Gaentzsch	Team Leader: GIZ Support to the Chamber of Control in Georgia. Project started in 2003. Follow up project in 2012 – with CCG and IA at MoF	anja.gaentzsch@giz.de
World Bank	3. Ms Elene Imnadze	Senior Programs Officer - PFM specialist	Eimnadze@worldbank.org
IMF	4. Ms Nia Sharashidze	Local economist	NSharashidze@imf.org
Free lance expert	5. Mr Tengiz Gvelesiani	Former EU PFM Expert	tgvelesiani@gmail.com
SIDA	6. Ms Khatuna Zaldastanishvili	Program Officer	khatuna.zaldastanishvili@foreign.ministry.se
Transparency International	7. Mr Mikheil Kukava	Senior Analyst	michaelkukava@yahoo.com mikheil@transparency.ge
PMCG	8. Mr Zaza Broladze	Managing Director – Local economist	z.broladze@pmcg.ge
PMCG	9. Mr Lasha Meskhia	Consultant	l.meskhia@pmcg.ge
GHK	10. Ms Charu Wilkinson	Principal consultant	charu.wilkinson@ghkint.com
GHK	11. Ms Juliette Mathis	Consultant	juliette.mathis@ghkint.com

4 REPORT OF THE FOCUS GROUP DISCUSSION WITH WIDER STAKEHOLDERS

4.1 Introduction

This report summarises the results of the second focus group discussion, held on 16 December 2011 with a wider group of stakeholders comprising representatives of businesses, think tanks and civil society organisations.

4.2 Objectives of the Focus Group Discussion

The objective of the focus group discussion was to reflect and deliberate over the following topics:

- Stakeholders' perceptions of EU-Georgia relationship.
- Visibility and confidence boosting effects of the joint IMF-EU package;
- Stakeholders' awareness of the reforms being supported by the EU in Georgia; and,
- The impact of EU promoted reforms in the area of economic governance i.e. stakeholders' perceptions of any improvements in economic governance in recent years (i.e. greater transparency, accountability and openness.

4.3 EU-Georgia Relationship

Generally speaking, the participants were of the opinion that the EU has an important role to play in promoting reforms in Georgia. Closer integration with the EU (not necessarily EU membership) is seen as a strong incentive for the Government to pursue reforms. According to one participant, the Deep and Comprehensive Free Trade Area (DCFTA) agreement between the EU and Georgia, for instance, was a more important consideration for the Government in undertaking reform in certain areas than the welfare of its own citizens.

The business associations felt that EU-Georgia relationship building and dialogue takes place at a government-to-government level and there is little dialogue at a business-to-business level. Specifically, there is little contact between the business associations in Brussels and Tbilisi.

A majority of the people in Georgia are in favour of closer integration with the EU; a small fraction is against it mainly because of the ambivalence of politicians on the issue of EU membership. Politically, the Government wants closer integration with the EU. However, economically, EU legislation goes against the grain of the 'free market' philosophy of the Government.

A poll conducted by Eurasia Partnership Foundation in 2009 demonstrated that Georgians have extremely positive views regarding the EU, with some four-fifths (79 per cent) of people supporting membership[4]. A more recent poll[5] conducted by Eurasia also gives similar results - 80 percent of Georgians would vote to join the EU and 88 per cent think Georgia should be a member of the EU (up from 81 per cent in 2009). More than 80 per cent of Georgians say it is very or rather important to strengthen ties with the EU (89 per cent); NATO (84 per cent); the USA (86 per cent). According to the report, Georgians hold generally positive views on the EU. They tend to believe that it is democratic, interested in supporting Georgia, and that conditions in the country would improve were it to become a

[4] Eurasia Partnership Foundation (2009) *Georgian Public Opinion - Attitudes towards European Integration - Narrative Report*. [online] Available at: http://www.epfound.ge/files/eusurveyreport_georgia_aug09.pdf

[5] Eurasia Partnership Foundation (2011) *Knowledge and Attitudes toward the EU in Georgia*, dated 5 December 2011. [online] Available at: http://www.epfound.ge/files/eu_report_final_eng_corrected_25jan2012.pdf

member. However, EU membership is not seen as the answer to all Georgia's problems and there is also growing uncertainty as to what membership would actually achieve.

4.4 Visibility and Confidence Boosting Effects of the Joint IMF-EU Package

According to the participants, the public and businesses are overall aware of the support provided by the EU to Georgia at the International Donors Conference, but the MFA instrument is not visible to them. The public relations and communication strategy of US is perceived to be much stronger than the EU.

According to the 2011 poll mentioned above: *'Georgians are much better informed about the EU than they were in 2009, there remains a significant lack of awareness about the ways that Georgia and the EU cooperate now, as well as the way in which the EU supports Georgia'*[6].

4.5 Awareness and Perceived Impact of EU Promoted Reforms

Businesses and the public are typically not involved in decision making and there was a general feeling among the participants that the Government's approach to reform is top-down. According to the participants, dialogue and communication between citizens /business community and the Government is not taking place systematically and is not institutionalised. This is partly because businesses themselves are not taking any initiative in engaging in dialogue with the Government.

The citizens and businesses of Georgia seem to lack awareness of the reforms in the area of economic governance. For example, there is lack of awareness among the general public that office-holders could be subjected to control mechanisms by the CCG, for example. An observation of the GHK team is that the media and civil society organisations could perhaps play a greater role in scrutinising government's spending priorities (as set out in the budget) and monitoring the activities of the CCG (to ensure that it is doing its job well). The media and civil society organisations thus have an important role to play in holding public bodies accountable and exerting pressure on them to undertake further reforms and improvements. This would minimise the gap between *de jure* and *de facto* reforms.

One of the participants who had previously worked with the CCG explained that the CCG will start conducting performance audits in 2012. The reforms at CCG have been successful, but not sufficient. According to the participant, the following areas of PFM reform require external donor assistance: internal auditing; programme based budgeting; and external audit.

In the context of this discussion, it was pointed out by one participant that transparency cannot be fully achieved unless media can operate in a free and independent manner. One of the independent TV broadcasters in Georgia has closed down. Despite making progress in reforms in many areas, the Government has stalled on the issue of freedom of the media.

Moreover, it was suggested that civil society organisations lack initiative due to structural problems related to the Soviet past. There is no institutional cooperation between civil society organisations and the Government. The Government is transparent to the extent that it does not create any problems for the Government.

For example, e-procurement system is quite transparent. But public bodies find ways of avoiding the e-procurement system (by claiming that tenders are urgent). Moreover, some agencies are exempt from the e-procurement system.

There are many fields where reforms are needed. However, there is lack of Government will to conduct genuine reform. Reforms are undertaken at a technical level mostly. The donors, and particularly the EU, should observe reforms very carefully to check progress on the ground and not be satisfied with the implementation of reforms on paper.

[6] Eurasia Partnership Foundation (2011) *op cit*

An area of governance where reform is lacking is decentralisation. This aspect is also under-represented in EU support. There are some capacity-building initiatives in this area, but not much else. The EU has the leverage to push decentralisation higher up on the political agenda. Decentralisation is an essential part of governance reform. The Eastern Partnership has given some impetus to reforms in this area – a forum for civil society organisations has been created but the EU has not prioritised this area.

The EU could also support more development orientated issues such as innovation and the development of a knowledge based economy. More specifically, the participants felt that any future EU support could target the following areas:

- Promoting business-to-business dialogue and linkages (between business associations based in Brussels and Tbilisi);
- Support for education in technical fields;
- Translation centres to make knowledge more accessible;
- A more strategic vision for the agricultural sector which employs 50 per cent of the work force but produces only 7 per cent of the GDP;
- SME development;
- Development of a bottom-up approach to policy making;
- Decentralisation;
- Competition – there is some tension between the Government and the anti-monopoly agency. Additional effort is needed to break up monopolies and promote competition.

4.6 List of Participants

Organisation	Name	Position	email
ICC Georgia	1. Ms. Tina Iashvili	Coordinator	tina.iashvili@icc.ge
Business Association of Georgia	2. Ms Nana Tsertsvadze	Project manager	n.tsertsvadze@bag.ge
American Chamber of Commerce in Georgia	3. Mr David Lee	President AmCham. General Director of MagtiCom, leading mobile communications company	amcham@amcham.ge dlee@magticom.ge
Center for Effective Governance Systems and Technological Advancement of Regions ("CEGSTAR")	4. Mr David Chichinadze	Executive Director	david@cegstar.ge
Georgian Business Consulting	5. Mr Irakli Lekvinadze	Economist	ilekvinadze@gbc.ge
Eurasia Partnership Foundation	6. Mr Vakhtang Kobaladze	Program Officer	vkobaladze@epfound.ge
PMC Research Center	7. Mr Levan Alapishvili	PFM Consultant	l.alapishvili@pmcg.ge
PMCG	8. Mr Zaza Broladze	Managing Director – Local economist	z.broladze@pmcg.ge
GHK	9. Ms Charu Wilkinson	Principal consultant	charu.wilkinson@ghkint.com
GHK	10. Ms Juliette Mathis	Consultant	juliette.mathis@ghkint.com

5 MACROECONOMIC MODEL DESCRIPTION

5.1 Introduction

In order to evaluate the net economic impact of the MFA, it is necessary to isolate the direct and indirect effects of the support from other concurrent economic developments. This requires a comparison between two states of the world: one in which the MFA support is given, and one in which it is not. However, an 'evaluation problem' arises because only one of these two states is actually observable, the one in which the MFA is provided. The alternative state (the 'counterfactual' scenarios) must somehow be constructed in order to carry out the necessary comparison.

To inform the evaluation, a model-based approach was used; one that links the 'real' economy, as defined by purchases of goods and services, with the financial sector in Georgia. For a given change in its input assumptions, the model provides a framework for generating an internally-consistent depiction of the economy as a whole. Changes in the exogenous input assumptions generate concomitant changes in the endogenous variables of the model. It is thus possible to simulate states of the world both with and without MFA by changes in the assumptions. A comparison of the two simulations yields an estimate of the net effects of the MFA. A key advantage of a quantitative model is that it is explicit in its framework, economic logic and assumptions, allowing for scrutiny and testing of the results it produces.

Key outputs from the model are macroeconomic and macro financial variables such as:

- GDP (and its components, as represented in national accounts data);
- Government finance statistics (revenue, expenses, deficit financing/debt);
- The Balance of Payments (trade flows, transfers, changes in reserves etc).

The model applied to the evaluation also includes indicators of the money supply (linked to the banking system) and a simple treatment of employment (linked to economic activity).

The results from the model also help to inform and frame the assessment of the contribution of MFA to Georgia's economic stability in terms of debt levels.

The model follows the principles of a *'flow of funds'* approach. Such models have been used in the past, for example by the IMF (notably, the 'financial programming' approach[7]), and share many of the features of the models applied in previous MFA evaluations for the European Commission. GHK and Cambridge Econometrics reviewed the approach used previously, as part of a meta-evaluation of MFA operations (2009)[8] and made some recommendations for improvements. Where the data permit, the modelling approach to the evaluation of MFA to Georgia attempts to address some of these recommendations.

The sub-sections that follow provide an overview of the model, its parameterisation, data, and application.

[7] See, for example IMF (1987), 'Theoretical Aspects of the Design of Fund-Supported Adjustment Programs', Occasional Paper 55.

[8] GHK and EPEC (2009) 'Meta-evaluation of Macro-Financial Assistance Operations (2004 – 2008)', Final report submitted to DG ECFIN, 2 October 2009: http://ec.europa.eu/economy_finance/evaluation/pdf/final_report_meta_en.pdf

5.2 Model Overview

The table below lists the five key elements of the economy that the model identifies. Each element has a corresponding key indicator or balance.

Table 1: Key Elements of the Model

Element	Indicator/ Balance
The Real Economy	GDP = Private Consumption + Gross Investment + Government Spending + Exports - Imports
The Labour Market	Unemployment = Labour Supply – Employment
The External Balance	BoP = Current Account – Capital Account – Reserves
The Government	Government Budget = Government Receipts – Government Expenditure
The Banking System	Money Supply = Net Foreign Assets + Government Credit + Net Domestic Assets

Each of these indicators represents a 'flow', a value measured over an interval of time, e.g. government budget surpluses or deficits are typically measured over a quarter or year. Implicitly, changes in these flows lead to changes in 'stocks', variables measured at a particular point in time, e.g. total government debt.

The definition of the indicators in the table shows immediately some interdependencies between the elements. Government spending is a component of final demand (a measure of GDP), but also an important determinant of the government budget. The flow of funds approach recognises these interdependencies and provides an integrated approach to modelling the elements.

A key feature of a flow of funds model is its accounting consistency. An outflow of funds (expenditure) from one sector must show up as an inflow (receipt) to one or more of the other sectors. Changes in trade patterns and the receipt and allocation of MFA funds, by definition, alter an array of other economic variables, including real-economy variables, through the accounting framework of the model.

The table below shows a simplified version of the accounting framework in the model, drawing on the work of Godley & Lavoie (2005[9] and 2006[10]), in the form of a transactions matrix, which tracks the flows between sectors in current prices. In each scenario, and for each period of analysis, the model will produce one of these transactions matrices.

[9] Godley & Lavoie (2005), 'Simple open economy macro with comprehensive accounting: a two country model', CFAP Working Papers, 20, Cambridge Centre for Financial Analysis & Policy:

http://www-cfap.jbs.cam.ac.uk/publications/downloads/wp20.pdf

[10] Godley & Lavoie (2006), Prolegomena to realistic monetary macroeconomics: a theory of intelligible sequences, Levy Economics Institute Working Paper, 441, Levy Economics Institute of Bard College:

http://www.levyinstitute.org/pubs/wp_441.pdf

Table 2: An Example Transactions Matrix

	Households	Firms		Banking System	Government	Foreign	Total
		Current	Capital				
Private Consumption	-C	+C					*0*
Government Spending		+G			-G		*0*
Investment		+I	-I				*0*
Exports		+X				-X	*0*
Imports		-M				+M	*0*
Income/Output	+Y	-Y					*0*
Taxes	-T				+T		*0*
Subsidies		+S			-S		
Grants (e.g. MFA)					+MFA	-MFA	
Financial assets	$-\Delta B_p$			$-\Delta B_b$	$+\Delta B$	$-\Delta B_f$	*0*
Reserves				$-\Delta R$		$+\Delta R$	*0*
Change in Wealth/Debt	$+\Delta W$	0	0	0	$-\Delta B$	$-\Delta R$	*0*
Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*

The columns of the matrix denote sectors distinguished in the model and the rows represent economic variables and financial assets that flow between these sectors. The level of disaggregation in the model's actual transactions matrix is somewhat greater than the example above, distinguishing between, for example, different types of taxes and domestic and foreign financial assets. Moreover, the table only shows a limited selection of asset flows between sectors (some of which are illustrative), to avoid cluttering the exposition.

Note that the matrix only distinguishes transactions between sectors, not within sectors. One of the recommendations from the review of previous MFA evaluations was that a greater level of sectoral detail would be useful. In principle, this is possible and amounts to disaggregating *current production by firms* either as additional columns in the matrix, or as a separate set of relationships that feeds into the existing *current production by firms* column. While there are some sectorally-disaggregated data for Georgia, it was felt that this development risked over-complicating the modelling framework for this evaluation, although the options for extending the model in this way will also be separately assessed for any future evaluations .

For the accounting identities to hold, every outflow from a sector must be matched by inflows to one or more of the others. The transactions matrix reflects this by requiring that the rows of the matrix sum to zero. In a simple case, *consumption by households* is an outflow (and hence negative) of value $-C$ that must be matched by an inflow of funds to firms (in exchange for their production) of $+C$. A more complicated example is *government issuance of bonds* (an inflow of funds to the Government sector of $+\Delta B$); the payments may be split domestically between Households ($-\Delta B_h$) and the Banking System ($-\Delta B_b$), but also abroad, to the foreign sector ($-\Delta B_f$).

In the example transactions matrix above, the column sums of the inter-sectoral transactions do not necessarily sum to zero. However, any non-zero flow totals must implicitly lead to changes in stocks (entries in sectors' balance sheets).This is the case for Households, Government and the Foreign sector. Any excess of government spending over the level of tax revenues must be financed by bonds ($+\Delta B$), creating a liability on the government balance sheet i.e. an increase in debt. Similarly, differences between household income and expenditure should lead to changes in household wealth (either through saving or dissaving).The availability of data determines the extent to which the underlying balance sheet can be represented. Government debt (a key indicator of financial soundness) is straightforward to include in the model, as is the money supply and reserve assets, all of which are included in the model for this MFA evaluation. The absence of a comprehensive treatment of stocks, and sectors' behaviour in response to the state of their balance sheets is perhaps the key difference between the modelling approach outlined here and the 'stock-flow consistent' approach advocated by Godley and Lavoie (2006)[11]. The advantage of being able to construct a full balance sheet comes from the ability to model fully dynamic adjustment behaviour. For the purposes of this evaluation, some elements of the model are dynamic, but nothing critical is lost by not having a complete balance sheet in this study.

The accounting requirements of the transactions matrix above have a number of implications. First, each element in a row or column is necessarily determined by the other elements. For example, a certain level of expenditure on imports by firms ($-M$) necessarily implies the same level of receipts abroad ($+M$), and vice versa[12]. Second, imposing accounting consistency by row and column gives rise to 'quadruple accounting': a change in the rate of taxation affects the taxes levied from Households ($-T$) as well as government revenue ($+T$); but it also affects the size of the deficit in that period. The government must make up any shortfall in revenues with an increase in debt ($+\Delta B$), which must be bought either domestically or from overseas, potentially leading to further rounds of impacts.

The accounting identities are central to the model, dictating the transmission channels between sectors. The matrix also implies that a choice must be made as to which variables are to be determined behaviourally and which arise as a matter of accounting consistency[13]. Such considerations are referred to as issues relating to how the model is 'closed' (see section 5.3).

5.3 Parameterisation

This sub-section first discusses how to 'close' the model (how to impose the accounting identities), before discussing the parameterisation of the model, in terms of its behavioural relationships.

'Closing' the Model

Because of the strict accounting requirements of the transactions matrix (the elements in the rows and columns must all sum to zero), it is necessary to choose which elements should be determined behaviourally and which should be solved by accounting identity. These decisions are referred to as 'closure rules'.

In some cases, the choice is obvious: for example, final demand should be set by the sectors that consume the output and firms' production should follow to meet the demand as a consequence. Household consumption ($-C$) should be set by an equation, and firms production ($+C$) should match it. The same holds for the other components of final demand,

[11] Godley & Lavoie (2006), Prolegomena to realistic monetary macroeconomics: a theory of intelligible sequences, Levy Economics Institute Working Paper, 441, Levy Economics Institute of Bard College:

http://www.levyinstitute.org/pubs/wp_441.pdf

[12] The first n-1 variables in any row or column determine the nth variable.

[13] It is also possible to take advantage of the accounting framework to derive variables for which there are no data. If there are data for n-1 variables, the 'data' for the nth is implied as an accounting requirement.

although some demands will of course be set by assumption (e.g. Government Spending). In such a case, it is important to note that exogenous government spending is a decision that relates to the model's behavioural relationships; regardless of how government spending comes about, firms' production must adjust to meet it.

In other cases, the choice may require some judgement, possibly based on the relative flexibility of the economic/financial assets (which variables/sectors typically use as 'buffers' to accommodate unexpected changes) and the sectors that purchase/supply them. For example, in the matrix above, a decision must be made as to which sectors purchase government debt, i.e. the allocation between the private sector ($-\Delta B_h$) and the Central Bank ($-\Delta B_b$).In such a case, it seems reasonable to assume that the private sector has a limit to how much government debt it is willing to take and that the Central Bank will buy up any excess (owing to its ability to print new money)[14].

In the context of the evaluation of MFA to Georgia, the assessment of the potential counterfactual scenarios suggested a limit to how much debt the Georgian government could incur in the year 2009. Consequently, a key closure of the model is that domestic borrowing cannot exceed a predefined limit: government expenditure must adjust to preserve this constraint.

Behavioural Parameters

The accounting in the model consists of identity relationships that are clearly defined and fixed; only the decision regarding the closure rules is potentially ambiguous. The accounting rules thus relate the elements of the transaction matrix to each other and the key decision is *which* variables are set by accounting identity.

In contrast, behavioural relationships of the model determine *how* the elements of the transactions matrix are set. Ideally, one would employ econometric methods to estimate the parameters, lending an empirical foundation to the model's behaviour. However, short time series (less than ten years of annual data) and the likely presence of outliers and structural breaks prevent the rigorous use of these more formal methods (calibration, which involves fitting parameters to the available data by hand, is also unlikely to be possible in many cases). A range of alternatives to econometric estimation are discussed in Swann (2006)[15], but the majority of behavioural parameters in the current model are derived either from crude estimation (with few options to address equation mis-specification in the manner normally required in econometric estimation) or by taking simple ratios of variables. In fact, the only relationships for which the model uses econometrically-derived parameters are:

- Private expenditure
- Investment
- Imports
- Inflation
- Employment

This is discussed further in the sub-section that follows (section 5.4). All other variables are solved as ratios, which may evolve over time.

[14] In the absence of a detailed treatment of private wealth, for the current evaluation for Georgia, domestic debt is notionally held in its entirety by the banking system, rather than the private sector.

[15] Swann (2006) 'Putting Econometrics in its Place: A new direction in applied economics', Edward Elgar, Cheltenham

5.4 The Elements of the Model

This sub-section describes each of the elements of the model in turn and how they relate to the transactions matrix.

The Real Economy

At a high level, the real economy is defined by the standard measure, GDP. The definition, by the expenditure method is:

GDP = C + I + G + X – M

where:

C	=	Private Expenditure (or Consumption)
I	=	Investment Expenditure
G	=	Government Expenditure
X	=	Exports
M	=	Imports

The transactions matrix thus identifies GDP as the sum of the first five rows in the *firms current production* column (Table 2). The matrix also identifies the corresponding purchasing sectors along the rows.

Each of the components of GDP must somehow enter the model, whether by assumption or some rule or equation that endogenously determines the value. One or more measures of prices are also required and the treatment in the existing MFA evaluation framework, of linking inflation to the money supply, is considered to be fit for this purpose. In any case, the costs of implementing something more detailed are likely to outweigh the benefits[16].

In the current model, the relationship between inflation and the money supply is obtained from a simple regression of the natural logarithm of the inflation rate (the rate of change in the GDP deflator) against the log of the rate of change of the money supply (M3). The equation yields an elasticity of 0.164 i.e. a 1 per cent increase in the money supply leads to a 0.164 per cent increase in inflation.

The key determinant of private expenditure (+/- C in the first row of the matrix) is income, which is proxied with GDP. A price elasticity with a sensible sign or size could not be obtained and, consequently, constant-price consumption is solely a function of real income, with an income elasticity of demand of 0.294.

Investment in the kind of economic and political climate in which the MFA (and, previously, Exceptional Financial Assistance) was provided to Georgia presents a potential problem due to economic theory, highlighting the importance of expectations in determining investment. It is difficult, given the lack of data, to capture these factors in the model and the final equation expresses investment as a function of real output (GDP) and real interest rates. The output elasticity is 0.845 and the elasticity on real interest rates is -1.491. While on the bounds of what might be considered reasonable, as a system the macroeconomic model for Georgia proved relatively insensitive to investment and there seemed little point in attempting to formally derive alternative parameters.

Government expenditure (and changes under different states of the world) is a key model input for assessing the MFA and is solved endogenously, in the presence of a constraint on domestic borrowing; government expenditure adjusts to a level (accounting for changes in economic activity that drive changes in tax revenue) where net domestic borrowing does not exceed the maximum specified in the counterfactual scenario.

[16] An alternative would derive prices as a function of the prices of inputs to production. This treatment is more complex and possibly overly so when it comes to solving the model.

Exports (and exchange rates) are assumed exogenous in the counterfactuals. In the case of exports, real exports are held constant (in nominal terms, the values may change across the scenarios).

Import demand is typically specified as a function of final expenditure and prices (accounting for exchange rates), but the only equation supported by the available data, that produced a reasonable parameter value, expresses imports purely as a function of real GDP. The output elasticity is 0.929, which appears to reflect Georgia's relative trade openness and dependence on imports. During model solution, the import equation maintains a level of current-price imports roughly 50 per cent of current-price GDP, the import propensity observed for much of the available historical economic data.

The Labour Market

The addition of a labour market component is a new development recommended in the MFA meta-evaluation. Some econometric analysis was carried out to derive an employment equation, but the parameter results were implausible, implying perverse employment/output responses. Employment in the current model is set as a fixed ratio to real GDP (0.11), implicitly imposing the assumption of fixed labour productivity over the counterfactual period.

To calculate unemployment, a measure of labour supply is required. This is taken to be exogenous in the scenarios. A more complete treatment is beyond the scope of this evaluation, requiring more data on the factors that determine participation in the workforce.

The External Balance

The key element of the external balance is the balance of payments (the current account minus the capital account) and set by an identity relationship into which the MFA grant (100 per cent grant element and no loan element) is separately identified. The column of interest for this element of the model is the foreign sector. The complete model distinguishes the key elements of the balance of payments (current transfers, other investment etc), bridging them, importantly, with the balance of trade (exports minus imports, requiring no explicit assumptions about the adjustment mechanism) in the real economy as well as net acquisition of foreign assets and net incurrence of foreign liabilities in the government sector (which is important in capturing the effect of SBA). The majority of these flows are set to their actual historical values as assumptions, with reserves allowed to adjust automatically.

The Government

The government in the model is defined by flows of revenues in (from receipts, $+T$; it may also include an MFA grant, depending on the scenario) and expenditures out ($-G$, which is also the government consumption component of final demand). Combined, these give the deficit ($+\Delta B$), which is also a flow, which affects the evolution of the public debt. The majority of tax and expenditure flows are set as ratios (implied tax rates), such that higher expenditure automatically leads to, for example, higher VAT receipts. The endogeneity of taxes and government expenditure (to meet a target annual deficit) gives rise to wider economic impacts. For example, in the counterfactuals, decreases in government expenditure depress GDP, lowering expenditures from other sectors, further depressing GDP. Moreover, changes in expenditure levels alter tax receipts, disturbing the government balance, potentially requiring further adjustments to government expenditure.

The Banking System

The banking system serves an important function in facilitating expenditure. In the model, it is represented in terms of holdings of financial assets, both domestic (holdings of some government debt, $-\Delta Bcb$) and foreign (reserves, $-\Delta R$), linked to the money supply ($+\Delta M$). The key accounting identity is the following balance sheet relationship:

$$\mathbf{\Delta M = \Delta R + \Delta D}$$

where ΔM is the change in the money supply, ΔR is the change in reserves and ΔD is domestic credit, which is further broken down to:

$$\mathbf{\Delta D = \Delta Dp + \Delta Dg}$$

ΔDp is the change in private sector credit and ΔDg is the change in government credit.

The combined identity, which states simply that liabilities (money) are equal to the sum of foreign and domestic assets, is thus:

$$\mathbf{\Delta M = \Delta R + \Delta Dp + \Delta Dg}$$

As mentioned in the external balance section above, ΔR is the balance of payments residual (i.e. it solves endogenously). Change in domestic government credit (ΔDg) is linked to the government balance (as changes in financial assets/liabilities) and fixed in the counterfactuals such that government expenditure solves endogenously. Private-sector credit is assumed fixed, such that changes in the balance of payments and government debt constraint lead automatically to changes in the supply of money and, in turn, inflation.

5.5 Data Sources and Availability

The database for the model has been constructed using the following data sources:

- Official national statistics for Georgia[17]
- Ministry of Finance of Georgia[18]
- National Bank of Georgia[19]
- The IMF World Economic Outlook database[20]
- IMF International Finance Statistics

Discrepancies between datasets were found mainly to do with standard differences in the coverage of different statistical surveys i.e. reconciling statistics for Georgia presented no further problems than those encountered for other countries. Differences in variables that should, in principle, relate to the same quantity (e.g. changes in debt versus stocks of debt) are reconciled with an additive residual to absorb the accounting discrepancy.

5.6 Applying the Model

Scenario analysis

The principal application of the model is scenario analysis: analysing *'what if?'* alternative outcomes of recent history, subtracting the various aid flows and allowing the model to generate internally-consistent projections. Differences in the counterfactuals relative to the baseline (as represented in the historical data) give an indication as to the likely evolution of the Georgian economy in the absence of aid and the likely policy-related adjustments.

While a number of variables are assumptions in the framework, for which accounting identities are suitable, to calibrate the model to a baseline view, the results from the behavioural relationships must be calibrated to outturn data. This is achieved by solving for the relevant variables and calculating the additive residual error, much like accounting discrepancies are dealt with when reconciling the data. These errors are stored and applied in the final runs. Provided no assumptions are changed, the model will then reproduce the baseline endogenously.

Estimating the Probability of Default

In addition to the deterministic outcomes of individual scenarios, it is in principle possible to use the model results to help gauge the probability of entering a crisis situation, in the base case and in the counterfactual scenarios. A crisis situation might for example be defined as when external factors prevent one of the key financial balances (i.e. the government, banking and external model components) from solving, ultimately leading to a default e.g. if reserves are completely depleted.

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[17] National Statistics Office of Georgia: http://www.geostat.ge/

[18] http://www.mof.ge/en/Home

[19] http://www.nbg.gov.ge/

[20] The most recent publication is the April 2011 database: http://www.imf.org/external/ns/cs.aspx?id=28

This will require an assessment of both the levels used (e.g. government debt as a share of GDP) and the difference from base in the scenario results. The results from both will be provided to experts in the focus groups to gauge the likelihood of a crisis occurring and could draw on the empirical work carried out by Rogoff and Reinhart (2009)[21]. In contrast to previous evaluations, such an approach tends to favour specifying the modelling framework in levels rather than differences to be applied to the baseline, in order to derive the relative sizes of stocks (debt) to flows (GDP).

In any case, while the model for this evaluation is specified in levels, making it appropriate for such analysis, the size of the MFA was quite small, making it difficult to see, from the modelling framework, to what extent it contributed to stability. The SBA was a great deal larger, although the partially dynamic nature of the model makes it difficult to solve forward without introducing further simplifying assumptions to form a baseline view. The absence of measures of capital stocks and productive capacity, key determinants of future economic growth, also presents a hindrance, and the availability of such data is generally quite limited.

[21] Rogoff, K and Reinhart, C (2009) 'This Time is Different: Eight Centuries of Financial Folly', Princeton University Press, Princeton and Oxford.